

# THE REVIEW

DEVOTED TO THE INTERESTS OF THE AMERICAN SOCIETY FOR STEEL TREATING

Volume 1

Application for Second  
Class Entry Pending.

August, 1930

No. 2

## DIRECTORS MEET IN CLEVELAND JULY 1, 2

Recommend Boston for 1931  
Metal Congress and Show

The board of directors of the American Society for Steel Treating had its regular summer meeting on the first and second of July at the national headquarters at Cleveland. There was a full attendance of the officers and directors.

A report was presented from Mr. Howard J. Stagg, chairman of the constitution and by-laws committee, giving the proposed changes in the constitution, providing for the establishment of an initiation fee which the committee had prepared upon instructions from the board of directors issued at their February meeting.

However, upon further consideration by the board, it was decided that the report from the constitution and by-laws committee providing for this change should be laid on the table for the time being, and no changes should be recommended to be made in the constitution at the annual meeting in Chicago in September.

The reports on the National Metal Exposition and the National Metal Congress were presented to the board. Both reports showed a very satisfactory condition.

The program for the A. S. S. T. convention, prepared under the direction of Director W. B. Coleman, was presented, and received the enthusiastic approval of the board.

The board was also pleased with the splendid progress of the Exposition and also the cooperation of the other national technical societies in the annual metal congress.

As reported in another section of THE REVIEW, the board decided that the annual award of the past president's medal and the Henry Marion Howe medal should take place at the annual meeting in place of at the banquet as heretofore, and that at the annual meeting instead of individual reports from the president and the secretary, a report should be presented over the signatures of both of these officers, giving an account of the activities and directions of the board of directors for the period of a year.

The committee on the location of the 1931 National Metal Congress and Exposition presented a report recommending Boston for the dates of September 21 to 25. This recommendation received the unanimous approval of the board of directors.

The exposition will be held in Boston on Commonwealth Pier.

The National Western Metal Congress and the National Western Metal

Continued on Page Seven

## PROGRAM CHAIRMEN MEET TO PLAN SESSIONS FOR CONGRESS

Conflicting Programs Adjusted

Heads of the program committees of the various societies participating in the National Metal Congress to be held in Chicago September 22-26, 1930, met in Atlantic City on June 26 to study means of avoiding conflicts in their technical programs. A similar meeting was held in 1929.

C. A. McCune and W. Spraragen were present on behalf of the American Welding Society. D. L. Colwell, A. B. Kinzel, J. T. Breunich, W. M. Corse and Sam Tour represented the American Institute of Mining and Metallurgical Engineers. P. T. Wetter was spokesman for both the Iron and Steel and the Machine Shop Practice divisions of the American Society of Mechanical Engineers. Representing the American Society for Steel Treating were R. G. Guthrie, W. B. Coleman, W. H. Eisenman and Ray T. Bayless.

Tentative schedules previously drawn up by the societies were re-arranged so that visitors to the Congress would have the greatest possible range of subjects to choose from at any particular session. The combined program of the societies participating in the Congress will be published in the September REVIEW.

An estimate of the attendance at each session was made by the representatives in order to make a suitable division of the meeting rooms so that all sessions would be properly provided for in regard to seating capacity.

## CAPTAIN O'HAY WILL ADDRESS ANNUAL BANQUET IN CHICAGO

Howe Medal to be Awarded at  
Annual Meeting of Society

Captain Irving O'Hay, United States Army (retired) has accepted the invitation of the American Society for Steel Treating to be the principal speaker at the annual banquet of the Society in Chicago the evening of September 25, 1930.

Captain O'Hay is well known as a lecturer and story teller whose talks are more than usually humorous. He has been called by Irving S. Cobb a "Connoisseur of Wars" because of his war experiences in Cuba, South Africa, the Balkans, Honduras, Nicaragua, Mexico and France. In 1917 he enlisted as a private in the regular U. S. Army but before his retirement in 1920 he had risen to a captaincy.

It was decided at the recent meeting of the board of directors, held in Cleveland, July 1 and 2, that the award of the Henry Marion Howe medal should be made on the occasion of the annual meeting rather than at the banquet, as in years past.

The Howe Medal award and the Edward de Mille Campbell Memorial Lecture, to be delivered this year by Dr. M. A. Grossmann of the Republic Steel Corp., will therefore be features of the annual meeting of the Society on Wednesday morning, September 24, 1930.

## GAS ASSOCIATION NOMINATES

Names to be Voted at Annual Meeting  
in Atlantic City Next October

The nominating committee of the American Gas Association will present the following names for election at the annual meeting of that organization in Atlantic City, N. J., October 13-17, it is learned at A. G. A. headquarters in New York.

For president—Clifford E. Paige, vice-president, the Brooklyn Union Gas Co., Brooklyn.

For vice-president—R. W. Gallagher, president, the East Ohio Gas Co., Cleveland.

For treasurer—W. J. Welsh, president, New York and Richmond Gas Co., Staten Island, N. Y.

Directors—two-year terms: Walter C. Beckjord, vice-president, the Boston Consolidated Gas Co., Boston; J. D. Creveling, associate manager natural gas and gasoline division, Henry L. Doherty & Co., New York; Raymond Cross, president, the Ohio Fuel Gas Co., Columbus; Henry L. Doherty, president, Cities Service Co., New York; Oscar H. Fogg, vice-president, the Consolidated Gas Co. of New York; Samuel Insull, Jr., president, Midland United Co., Chicago; F. A. Lemke, secretary-treasurer, Humphrey Co., Kalamazoo, Mich.; A. E. Peirce, president, Central Public Service Corp., Chicago; and Arthur Stockstrom, secretary, American Stove Co., St. Louis.

## TOOTHPASTE TUBE OFFERED IN EXCHANGE FOR HANDBOOK

Is a large tube of tooth paste a fair exchange for a 1930 National Metals Handbook? J. Edward Donnellan, editor of the Handbook, pondered the question at length before he said "no." "Somebody must think that this is the American Society for Tooth Treating," Donnellan said.

Also offered in exchange for a new Handbook were several S. A. E. Handbooks, many more of the old loose leaf data sheets and a small book of instructions for engineers and firemen of stationary steam engines. These were all returned to the sender with details as to what was really wanted—the Society's Handbook, 1928 edition.

An average of well over 200 old books have been received every day since mailing cartons were sent out to members. The first cartons were mailed shortly before the middle of June. Each was enclosed in an envelope with a sheet of instructions and postage rates. A few days after the cartons were mailed eight sacks of old handbooks were returned to headquarters and the fun began.

The first cartons to go out were addressed only to members west of Chicago, in order to distribute the demand for new books over a convenient period. Almost a week later the mem-



E. E. THUM

## "METAL PROGRESS" HEAD EXPERIENCED

Entire Career in Metal Work;  
Since 1917 Metals Writer

Ernest E. Thum was born in the metallurgical atmosphere of Pueblo, Colorado, and has not seen fit to get very far away from the science of metallurgy at any later period of life.

When Thum arrived at Pueblo three or four lead-silver smelters were in full operation; several brothers by the name of Guggenheim were working there and a small company called the American Smelting and Refining Company was just starting up. It was not long before Pueblo became the "smelter city of the west"; the Guggenheims accumulated large personal fortunes and the American Smelting and Refining Company became a leader in its field. Also in Pueblo was the Minnequa plant of the Colorado Fuel and Iron Company where Thum as a boy worked in the rolling mills and assisted in modernizing the plant by the installation of open hearth furnaces and modern finishing mills.

The editor of *Metal Progress* graduated from the Colorado School of Mines in 1906 with honors in mathematics. After his graduation he became field engineer for the Anaconda Copper Mining Company, stationed at the Washoe copper smelter in Anaconda, Montana. In December, 1908, he was sent to Tooele, Utah, where he had charge of

Continued on Page Six

## SEPTEMBER TO BRING "METAL PROGRESS", FROM THEN ON OFFICIAL SOCIETY ORGAN

E. E. Thum, Formerly Associate Editor of "Iron Age",  
Will Assume Editorial Leadership of Magazine

By W. H. Eisenman

The September issue of the TRANSACTIONS will become METAL PROGRESS, according to the decision of the Officers and Board of Directors of the Society, arrived at during their meeting held February 5th, 1930—details of which were printed in the March 1930 issue of the TRANSACTIONS.

At the meeting of the Directors, in Cleveland in September 1929 it was decided to enlarge the present TRANSACTIONS to a 7x10 type page. Other changes developed from that time forward, so it was decided that inasmuch as there was to be a change in size it was the logical time to provide other improvements which would make the monthly publication of the Society a real achievement.

## AUGUST TRANSACTIONS LAST AS OFFICIAL PUBLICATION

Will Appear Annually Hereafter

The August issue of TRANSACTIONS is the last monthly issue of the magazine which since October, 1920, has been the official publication of the American Society for Steel Treating. *Transactions* now becomes an annual bound record of the technical papers presented before the Society. *Metal Progress*, which makes its first appearance in September, from then on will be the official publication of the A. S. S. T.

The first edition of the bound volumes of *Transactions* is due to appear in January, 1931, according to Ray T. Bayless, assistant secretary of the Society and editor of *Transactions*. It will contain all papers presented at the annual convention of the Society in Chicago, together with discussion, and any new papers submitted between then and the first of the year.

In addition, the volume will reprint the papers which appeared in the July and August issues of the monthly publication. Future issues of *Transactions* will be printed not less than once a year.

## WARNER NAMED SECRETARY, GENERAL MANAGER OF S. A. E.

Succeeds the Late C. F. Clarkson

John A. C. Warner has been announced as the new secretary and general manager of the Society of Automotive Engineers, which has headquarters in New York. Warner will succeed the late Coker F. Clarkson, the only other previous incumbent of the position, who held it for twenty years. The new office of assistant general manager has been created and will be filled by C. B. Veal.

Since 1926 Warner has been with the Studebaker Corp., as research engineer and superintendent of the proving ground at South Bend, Ind. Before that he was research engineer of the S. A. E. His career has been associated with the automobile and aircraft industries since his graduation from Worcester Polytechnic Institute in 1917.

C. B. Veal has been research manager of the S. A. E. since 1926. He also has had long experience in the automotive field.

## NOTICE OF THE ANNUAL MEETING

To the Members of the  
A. S. S. T.:

This is your official notice that the annual meeting of the American Society for Steel Treating will be held in the ballroom of the Hotel Stevens, Chicago, Illinois, on Wednesday morning, September 24, at 9:30 o'clock. All members of the Society in good standing are privileged to attend and to vote.

Cleveland, Ohio, Aug. 1, 1930.

Mr. Ernest E. Thum has been engaged as the editor of *Metal Progress* and associated with him will be a staff of field editors. The Society considers itself very fortunate indeed in having secured Mr. Thum, who is recognized as one of the leading metallurgical editors of the country and whose work and activities are well known and appreciated by the membership of the Society.

*Metal Progress* is not a new publication, the only new things will be its physical form and the addition of new editorial features which the broader activities of the Society have made it necessary to include. It is the official monthly publication of the American Society for Steel Treating superseding the monthly *Transactions* of the Society. *Metal Progress* will be forwarded to the entire membership of the Society, the subscription rate for the publication remaining at \$10.00 per year, the present charge for the TRANSACTIONS.

The American Society for Steel Treating has progressed with rapid strides since its organization in 1920. The scope of its activities due to the make-up of its general membership has long since ceased to be confined to the treating of steel. Many other phases of the production, inspection, fabrication, treatment and use of metals of all kinds have been gradually incorporated in the educational activities of the Society. It was to keep pace with this rapid growth and to satisfy the increasing demands of a membership whose executive duties require a knowl-

Continued on Page Four

## CHICAGO SHOW TO BE OPEN ONLY TWO NIGHTS IN WEEK

Several New Exhibitors Listed

Some changes in the hours of the forthcoming National Metal Exposition in Chicago have been announced by W. H. Eisenman, director of the exhibits. The major change is in the number of evenings during which the show will be open.

For the first time the exhibits will be open only two evenings instead of three, as in the past. Action on this matter was taken by representatives of the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, the American Welding Society and the American Society for Steel Treating in a meeting at Atlantic City on June 26.

The exposition will be open from 10 a.m. to 6 p.m. on Monday, Wednesday and Thursday. On Tuesday and Friday the exhibits may be viewed between noon and 10 P. M. This arrangement provides one more open evening than in previous years.

Several firms have contracted for space in the National Metal Exposition since the publication of the Exhibitors' list in THE REVIEW for July. They are the Babcock and Wilcox Co., New York; Kelley-Koett Mfg. Co., Covington, Ky.; Kinite Corp., Milwaukee; Ludlum Steel Co., Watervliet, N. Y.; Mill & Factory, Illustrated, New York; Minneapolis-Honeywell Regulator Co., Minneapolis; Northwestern Mfg. Co., Milwaukee; Production Machine Co., Greenfield, Mass.

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# THE REVIEW

Devoted to the interests of the American Society for Steel Treating

A Review of the Activities of the Chapters and National Organization of the A. S. S. T.

Published monthly by the  
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RAY T. BAYLESS, *Editor*  
JOHN G. MAPES, *Managing Editor*

Volume I Cleveland, O., August, 1930 No. 2

## THE BACKGROUND OF "METAL PROGRESS"

METAL PROGRESS will speak for itself in September far more convincingly than any editorial which might appear now in this newspaper. Suffice it to say that years of shrewd visioning and many months of concentrated effort will have passed before the first issue of the publication leaves the press.

All the visioning and effort was to the end that the members of this Society might continue to recognize in the official organ of the American Society for Steel Treating that same spirit of progress which has carried the Society to its present high position among technical organizations. High in ideal; modern in viewpoint; progressive in purpose—such are METAL PROGRESS and the American Society for Steel Treating.

## A NOTE OF GRATITUDE

The Nonferrous Data Sheet Committee of the Institute of Metals Division of the A. I. M. E. which planned and secured data for the nonferrous section of the Metals Handbook has been organized only two years. It has done remarkable work in this short time and the A. S. S. T. is indebted to the members for their efforts and cooperation. This splendid accomplishment of the Data Sheet Committee is due entirely to the untiring efforts of its individual members. The Committee is under the leadership of Mr. Robert S. Archer of the Aluminum Company of America. Members of the Committee are: Jerome Strauss, Vanadium Corporation of America, C. H. Mathewson, Yale University, T. S. Fuller, General Electric Co., and F. L. Wolf, Ohio Brass Co.

These men secured and prepared the articles to be found on pages 619 through 836 of the National Metals Handbook. To them and to those men who helped them, this Society is deeply grateful.

## A COFFEE TALK AT EVERY MEETING

By all means more coffee talks! They are instructive to Society members and they serve to bring Society activities before the general public. A good coffee talker will add to any meeting, particularly if he chooses to explain the workings of some industry or business not generally familiar to A.S.S.T. members. The technical program may be over his head at times, but it will educate him to the importance of the metal industries and to the rank maintained by this Society in metal progress.

## GREETINGS TO A NEW FRIEND

This Society offers a cordial greeting through the Penton Publishing Company to *Steel*, the magazine which will take the place of an old friend, *Iron Trade Review*. The Penton organization, because of its personnel and its publications, holds a high seat in each of the several industries it serves, and this decision to keep well abreast of progress in the steel industry is only one of many reasons for its commanding position.

## FINE FOOD FOR THOUGHT

Tasty food is a pleasure to eat, to describe or to hear about. More than one gathering around a dinner table has been led to success by a well-seasoned soup and a juicy slice of a prime roast of beef. Conversely, insipid salads and stringy roasts have depressed many a jovial enough dinner.

"A good dinner at a fair price" is a slogan that chapter entertainment and program committees should cock a keen ear to. Such a dinner can carry a mediocre meeting to Olympian heights and make a fine meeting something to remember for many months.

## NITRIDING AUTHORS



ROBERT SERGESON

H. J. DEAL



Robert Sergeson and H. J. Deal, Republic Steel Corporation, Massillon, Ohio, will discuss their recent investigations in nitriding during the special session on that subject at the National Metal Congress.

## LETTERS RECEIVED ON A. F. A. ACTION AGAINST WET SHOWS

### Member and Exhibitor Disagree

The first letter printed below was received shortly after the appearance of the July issue of THE REVIEW. In order to present both sides of the case, a copy of it was sent to a prominent exhibitor whose reply is now printed also. No further correspondence on this subject will be published.—Editor, THE REVIEW:

Are you interested in hearing the reactions of a typical A. S. S. T. Exposition visitor to the problem of lavish and liquid entertainment upon the part of the exhibiting business firms?

I read in the July REVIEW of the stand taken by the American Foundrymen's Association on this question. I am not required to state my personal feelings on alcoholic beverages, but to avoid needless discussion may I say that I am accustomed to buy and drink liquor in good temperance style. However, I have but two main reasons for attending National Metal Congresses and Expositions. The first is to broaden my acquaintanceship with men in my line. The second is to keep eyes and ears open for information which will be useful to me, personally, and to my firm.

When I enter an exhibition hall, whether it be in Cleveland, Philadelphia or Chicago, I want to meet people naturally and upon a healthy business and social basis, likewise I want to see the exhibits through unfogged eyes. It is only fair to say that I have been offered few drinks upon the floors of the A. S. S. T. expositions and I have refused these few offers, as already stated. The "lavish entertainment" to my mind lies not on the exposition floor but in the hotel rooms. Perhaps I am narrow minded but I have not yet come to appreciate friendships made and dissolved in stuffy, smoke-filled hotel rooms, littered with cigar butts and sticky glasses.

I am in favor of the attitude taken by the Foundrymen. I do not know the success attained by their resolution as I was unable to attend the Cleveland show in May, but it seems a step in a businesslike direction and no doubt will yield fruitful results.

D. G. G.

The above letter was submitted to an exhibitor, who wrote the following reply.

Editor, THE REVIEW:

I appreciate the opportunity of replying to Mr. D. G. G. and of telling him on behalf of 5 per cent of the National Metal Exhibitors who engage in this type of entertainment that the responsibility for liquor and lavish entertainment at conventions rests almost entirely upon convention visitors and not, as might be supposed, upon exhibitors.

Some customers, both present and possible, expect liquor. In fact, they demand it. We exhibitors can identify many of them as non-drinking tightwads in their home towns, but away from home they sponge all the drinks they can and, more than that, feel privileged to invite their friends around to drink at some manufacturer's expense.

We rent booths in order to make friends and keep them, and we have learned that we can do neither if we make some of our customers mad by failing to provide an adequate supply of drinks.

A closely related reason why we exhibitors act like bartenders during the convention is that we are afraid that our competitor will do more business than we if he is wet while we are dry. I would be glad to be a "dry" during the shows if every other exhibitor were also dry, for, I know that the money invested in liquor for friend-making purposes is poorly spent. It is a large investment with very low returns to the investor.

Mr. Editor, our customers are deserving of 95 per cent of the blame for lavish, liquid entertainment. The fault is not with us. It is with your own members.

E. M. B.

## American Society For Steel Treating

### BALANCE SHEET

As of June 30, 1930

#### ASSETS

CASH		
Petty Cash Fund .....	\$ 106.88	
Cleveland Trust Co. (Commercial Acct.) .....	16,193.29	
Savings Accounts .....	42,721.42	
		\$ 59,021.59
SECURITIES		
U. S. Government Bonds .....	\$ 27,689.70	
Other Securities .....	111,230.38	
		138,920.08
Accounts Receivable .....	\$ 8,921.29	
Less—Allowance for Doubtful Accounts ..	314.64	
		8,606.65
Inventory .....	10,966.33	
Travel Advances .....	3,191.94	
Insurance Premiums Prepaid .....	614.49	
Office Furniture and Fixtures .....	3,779.82	
DEFERRED		
Western Metal Show Expense .....	3,432.89	
1930 Convention Expense .....	8,734.94	
Total Assets .....		\$236,268.73

#### LIABILITIES, RESERVES AND SURPLUS

Accounts Payable .....	\$ 553.99	
Reserves .....	67,833.15	
Deferred Income—1930 Convention .....	20,181.46	
Western Metal Show ..	650.00	
SURPLUS		
January 1, 1930 .....	\$160,188.06	
Plus—Excess Income over Expense during period from Jan. 1 to June 30, 1930 ..	16,873.07	
		\$177,061.13
Less—Reserve set up for development .....	\$30,000.00	
Adjustments for old accts. ....	11.00	
		30,011.00
Total Liabilities, Reserves and Surplus .....		147,050.13
		\$236,268.73

## American Society For Steel Treating

### UNAUDITED INCOME AND EXPENSE STATEMENT

For the period January 1 to June 30, 1930

#### INCOME

Membership Dues .....	\$ 61,631.54	
Sustaining Exhibit Memberships .....	3,300.00	
		\$ 64,931.54
Less—Apportionment of Dues to Chapters ..	27,078.03	
		\$ 37,853.51
Transactions—Advertising .....	\$ 26,506.78	
Subscriptions .....	1,751.55	
Sales .....	625.61	
Reprints .....	516.00	
Bindery .....	716.50	
		30,116.44
Books Purchased .....	965.92	
General Index .....	17.40	
Books Published .....	2,090.13	
National Metals Handbook .....	717.15	
National Metals Handbook Advertising ..	6,478.00	
Interest Earned .....	\$ 1,824.59	
Interest Earned—Howe Medal Fund .....	61.98	
Discount Earned .....	452.92	
Sundry Income .....	204.32	
		2,543.81
Total Income .....		\$ 80,782.36

#### EXPENSE

Support of Chapters .....	\$ 611.04	
Transactions .....	24,690.44	
The Review .....	120.00	
Reprints .....	451.34	
Bindery .....	592.80	
Books—For Library .....	141.97	
Purchased for Resale .....	759.92	
Books Published .....	4,156.72	
National Metals Handbook .....	3,748.29	
Pencils, Pins and Buttons .....	182.50	
Extension Division .....	27.84	
1930 Convention Deferred Expense .....	\$ 8,734.94	
Western Metal Show Deferred Expense ..	2,432.89	
Semi-Annual Meeting .....		1,228.17
Nat'l Committees—Recommended Practice. Finance .....	\$ 1,877.48	
Publications .....	248.57	
	884.33	
		3,010.38
Directors .....	2,184.74	
President's Office .....	596.53	
Treasurer's Office .....	3,675.56	
Secretary's Office .....	11,737.03	
General Expense .....	5,994.02	
Total Expense .....		\$ 63,909.29
Excess Income Over Expense .....		\$ 16,873.07

## TO MAIL FARE CERTIFICATES

Members of All Societies at Congress to Get Low Round Trip Rail Fares

The passenger associations have granted reduced railroad rates for transportation to Chicago on the identification certificate plan. Round trip tickets will be sold at one and one-half single fare to holders of these certificates with a return limit about October 2nd, and one and three-fifths single fare with return limit of 30 days from date of sale.

Certificates will be mailed soon to members of all societies in the National Metal Congress. They may be used only by members and dependent members of their families. Companies holding sustaining memberships in the A. S. S. T. and who wish to send more than one representative to the Congress may secure extra certificates by sending the names of the individuals who are to use them to the Secretary of the American Society for Steel Treating, 7016 Euclid Ave., Cleveland.

## A. I. M. E. PROGRAM PLANNED

Iron and Steel Division Lists Sessions on Ore Beneficiation, Alloy Steels

Two of the technical sessions of the Iron and Steel Division of the American Institute of Mining and Metallurgical Engineers at the National Metal Congress in Chicago the week of September 22 will be devoted to papers on the beneficiation of iron ore, according to A. B. Kinzel, secretary of the division. The sessions will be under the supervision of C. B. Murray of the firm of consulting chemists and engineers, Crowell and Murray in Cleveland. Mr. Murray has been a very active officer of the Cleveland Section. In addition there will be a session on Structural and Engineering Alloy Steels. This session will include a paper on Steels for Oil Well Casings, a paper on Forging Alloy Steels and possibly a third. The Iron and Steel Division will also meet with the Institute of Metals in a joint session on Theoretical Metallurgy.



# 1930 METALS HANDBOOK MEETS ACCLAIM; BIGGER, BETTER BOOK PROVES POPULAR

Latest Publication of Recommended Practice Committee  
Contains Over 270 Pages of Brand New Articles

Hundreds of A. S. S. T. members have returned their old handbooks and have received a copy of the new, revised and enlarged Metals Handbook. Many other members have not as yet mailed their copy of the 1928 edition to national headquarters, though new books are reserved for them.

From the splendid response received by the Metals Handbook, it is certain that the book has taken its place among the important metallurgical reference books of the metal industry. This 1930 edition covers a broader and further reaching scope than the first edition. Those members who have not returned their old copies should do so at once and avail themselves of this more useful and more valuable metallurgical reference book.

To keep pace with progress in the metal world, the 1930 Handbook was thoroughly revised and many entirely new articles were written. The revisions in most cases were made possible by the help and suggestions from members of the Society, a co-operation for which the Recommended Practice Committee is greatly appreciative.

Some of the revised articles are: Abrasive Wheels for Grinding Steel; Cast Iron; Comparison of Brinell, Rockwell and Scleroscope Hardness Numerals; Constitution of Copper-Manganese, Copper-Silicon, Copper-Silver and Zinc-Magnesium Alloys; Corrosion of Iron and Steel; Critical Illumination in Photomicrography; Cutting Tests of Tool Steels; Definitions of Terms Relating to Heat Treatment Operations; Etching Solutions for Microscopic Examinations of Steels and Irons; Heat Treatment of Permanent Magnet Steel.

Metals and Ferro-Alloys Used in the Manufacture of Steel; Molybdenum as an Alloying Element in Steel; Nickel and Nickel-Chromium Steels; Photomicrography; Recommended Practices for the Heat Treatment of Alloy Steel and Carbon Steel Castings, Carbon Steels—S. A. E. Series, Dies for Die Castings, Oil Hardening Alloy Gears, Plain Carbon and Alloy Spring Steel; Recommended Practice for the Carburizing and Heat Treatment of Gears; S. A. E. Specifications; Salt Baths; Scleroscope Hardness Tests; Selective Carburization of Steels; Stainless Steels; Tool Steel Trade Names; and Vanadium as an Alloying Element in Steel.

The following is a list of the new articles on steel and allied subjects. The articles have added 146 pages of valuable matter to the handbook. Austenitic Manganese Steels; Case Depth Measurement; Chromium as an Alloying Element in Steel; Constitution of Iron-Molybdenum, Iron Phosphorus, and Iron Sulphur Alloys; Cyaniding; Linear Coefficients of Expansion for S. A. E. Steels; Manganese as an Alloying Element in Steel; Mechanism of Carburization; Modulus of Elasticity; Nickel as an Alloying Element in Steel; Nickel Cast Iron; Nickel-Chromium Cast Iron; Relation of Design to Heat Treatment.

S. A. E. Physical Property Charts; Tentative General Recommendation for the Heat Treatment of Tool Steels; Tentative Recommended Practices for the Heat Treatment of Chisels and a Standard Macro Etch Test for Iron and Steel; and Wire Rope or Cable and Recommended Practice for its Use.

Over 125 new pages of nonferrous material have been added to the 1930 edition, which greatly enlarges the nonferrous section of the book. The Recommended Practice Committee has, moreover, decided to add still more non-

ferrous articles to future editions of the Metals Handbook. The new subjects include brass foundry temperature measurements, broad aspects of the zinc industry.

The alloy constitution of aluminum-copper; copper lead; copper-nickel; copper-phosphorus; lead-calcium; magnesium-copper; magnesium-zinc; nickel-aluminum; nickel-carbon; nickel-chromium; nickel-manganese; and zinc-aluminum, as well as a study of the constitution of tin, antimony and copper alloys used for bearing metals.

Other nonferrous articles are: Etching of Copper and Its Alloys for Macroscopic and Microscopic Examination; Glossary of Terms Used in X-ray Metallography; Physical Constants of Copper, Lead, Magnesium, Tin and Zinc; Physical and Mechanical Properties of Nickel; Polishing of Copper and Its Alloys for Microscopic Examination; Structures of Tin-Antimony-Copper Alloys as Used for Bearing Metals; and Temperature Measurements of Molten Aluminum and Its Alloys.

The new Metals Handbook contains a total of 934 pages, 618 pages of which are devoted to steel subjects and 218 pages are devoted to nonferrous subjects. The other 98 pages are devoted to the index, advertising and buyers' guide sections.

At considerable additional expense all of the articles in the Handbook have been set in the same uniform page width and in the easily legible Ionic type which is being so extensively used by the leading papers and publications of the country.

Thirty-two of the original articles in this Handbook, totalling 203 pages, underwent partial or complete revision. The other original articles were carefully reviewed, but were found to be up-to-date. This material in the Metals Handbook, gives access to information in concise form that will be of great value and assistance.

For convenience the index section has been printed on blue paper and is in a section entirely by itself, which makes it easy to find. The Buyers' Guide and Advertising sections are in the buff section of the Handbook.

## CHICAGO MORE JUSTLY FAMED FOR INDUSTRIES THAN GANGS

Slaughter, by organized crime and in the packing houses, boot-legging wars and loosened bedlam typify Chicago in the eyes of many. But this is far and away from the real truth. True, they do have gang wars and some crooked politicians, but thanks to the strenuous publicity the Chicago newspapers have given to local crime and cheap politics, the public is now aroused to definite action. This publicity let Chicago in for plenty of ridicule from the outside but in reality it is a pretty fine city in which to live.

Industrially, the Chicago area, which includes a large slice of northern Illinois, northwestern Indiana, and southeastern Wisconsin, is a center served by most all of the large railroad systems of the country. All the transcontinental systems of the country terminate therein. Chicago marks the gateway to immense iron and steel consuming areas and to a huge farming population. Chicago abounds in transportation facilities. Lake Michigan and the Great Lakes afford water transportation between this and the great eastern centers. The Illinois River and a system of locks connect Lake Michigan with the extensive inland waterways of the Mississippi and the Ohio Rivers, reaching St. Louis, Pittsburgh, New Orleans, and the Twin Cities. If the deep sea waterway through the St. Lawrence River becomes a reality, ocean-going boats will sail from Chicago direct to European and other world ports.

Cheap and adequate transportation, close proximity to the iron mines of Michigan and Minnesota and the rich coal fields of southern Illinois make for a great iron and steel center.



G.M. GUILER

H.A. SCHWARTZ

H.H. JOHNSON

Bachrach

H. A. Schwartz, manager of the research department, National Malleable and Steel Castings Co., Cleveland, and two of his associates will present a paper on the electrolytic decomposition of cementite and austenite before the National Metal Congress in Chicago next fall.

## SEPTEMBER "REVIEW" TO BOOST CONGRESS

Convention Edition Will Be  
Read by 30,000 Metal Men

The September issue of THE REVIEW will be distributed to more than 30,000 executives in the metal industry. Copies will be sent to every member of the American Society for Steel Treating, the American Welding Society and the International Railroad Master Blacksmiths' Association.

Members of the Institute of Metals and the Iron and Steel division of the American Institute of Mining and Metallurgical Engineers will also get THE REVIEW as will members of the Iron and Steel and Machine Shop Practice divisions of the American Society of Mechanical Engineers.

The remainder of the edition will be sent to business and technical heads of steel and nonferrous metal plants in the great manufacturing district which surrounds Chicago. Much of the material in the September issue will be devoted to the National Metal Congress and Exposition which will be held in Chicago the week of September 22.

Information will be given on the exhibiting firms and the men in attendance at each booth; the complete program of technical sessions scheduled by each society in the Congress will be printed; information will be given on the new and simplified registration system; and other stories of interest to the American Society for Steel Treating, the American Welding Society, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers and other cooperating organizations.

This convention number will be larger than previous issues of THE REVIEW and will contain photographs of many men who will be prominent in Chicago during the Metal Congress.

## CHICAGO FAIR TO REPRODUCE MILLS

Director and Secretary of the  
Society on Advisory Board

An authentic model of the first steel rolling mill in the United States, which was erected in the Lehigh Valley of Pennsylvania nearly 100 years ago, and a reproduction of the mill invented by John Fritz at Johnstown twenty years later have been proposed for the Chicago World's Fair in 1933 as exhibits illustrating the status of the art of worked metals in the early part of the nineteenth century.

Beside the "two-high" Lehigh Valley mill of 1836 would be erected a replica of the modern mill of today to show the progress that has been made in the manufacture of worked products.

These recommendations, together with suggestions for reproducing hammers and presses, gas producers and furnaces used during the infancy of the steel industry, come from W. B. Coleman, of Philadelphia, a director of the A. S. S. T. and one of the nine scientists and engineers who form the iron and steel section of the National Research Council's science advisory committee to the Chicago fair.

Pennsylvania's part in cradling the iron and steel industry in this country will be dramatically portrayed in a series of other historical exhibits delineating metal fabrication. A shop of the early 19th Century period would show a steam hammer with the original type of heating furnace. Beside this, according to Mr. Coleman's plan, would be a modern plant with the furnace in continuous operation, and a "blooming" mill of repeating design.

In addition to the exhibits planned by Mr. Coleman the iron and steel industry will be portrayed at the Chicago fair by a series of models and scenes showing methods of mining and treating ore, blast furnaces in operation, the open-hearth and Bessemer processes, chemistry and physics, metallography, castings and foundry practice, manufacture of electric steel, and nonferrous metals. W. H. Eisenman, secretary of this Society, is chairman of the iron and steel section of the advisory committee to the Chicago fair. The advisory group is headed by Dr. Frank B. Jewett, president of the Bell Telephone Laboratories, of New York.

## SALES SESSION IN CHICAGO

New York Men to Give Dramatized Talk  
on Conversational Sales Strategy

Professor R. C. Borden and Alvin C. Busse of New York University will present a dramatized lecture on selling at a special sales conference to be held Tuesday morning, September 23, during the National Metal Congress in Chicago.

The lecture covers the conversational strategy applicable during the argumentative phase of a discussion dealing with the sale of either a product or an idea. Other sales material will also be presented at this session.

## STEEL TREATERS' DAILY PROMISED

The Steel Treaters' Daily, an established accessory of past National Metal Congresses, will be published during the Chicago Convention the week of Sept. 22, according to announcement by the Penton Publishing Co. As in the past, the daily will contain up-to-the-minute news of the Congress and Exposition and columns of interesting illustrated stories about members present. Copies of the daily will be sent to the home of every member of the A. S. S. T.

This daily newspaper of the activities of the Metal Congress delegates has been a decided asset to the convention and exposition.

## 1930 PHILADELPHIA CHAPTER YEAR OVER

Roebbling Co. Entertains Big  
Group at Annual Meeting

By A. O. Schaefer

The 1930 annual meeting of the Philadelphia chapter was held on June 11, 1930. Members and guests assembled at the plant of John A. Roebbling's Sons Company at Roebbling, N. J., and were escorted through by an able corps of guides.

The annual business meeting was held in the village of Roebbling. Mr. Allen, chairman, called the meeting to order at 4:50 P. M. Mr. Green, secretary-treasurer, read the minutes of the last meeting which were approved as read. He also read the treasurer's report for 1929-30.

Mr. Daniel Ross, of the John A. Roebbling's Sons Company, extended an official welcome to the Philadelphia chapter. He told how John A. Roebbling arrived in this country from Germany some 80 or 90 years ago and shortly thereafter began in Pennsylvania to manufacture wire rope which was then a new development. The plant in Trenton was founded in 1848. About 25 years ago, the need for additional space was felt and another plant was begun at Roebbling, N. J. Now there are about 3000 employees in each plant.

The products of the company include all kinds of wire. At present, the cables for suspension bridges are attracting much public attention. This sort of wire accounts for about 10 per cent of the output.

At the conclusion of Mr. Ross' talk, Mr. Allen called on Mr. Adams to present to Mr. Green, the retiring secretary-treasurer, who is transferring to the York group, a pair of silver candlesticks as a token of appreciation of his services to the chapter. Mr. Green is a charter member of the Philadelphia chapter, and has been an officer since its inception in 1918.

Mr. Allen reviewed the activities of the chapter during the past season. He spoke of the successful experiment of holding open meetings upon a given subject at which the chapter members presented their ideas and problems. In spite of the loss in membership occasioned by the starting of the York group, our number has increased from 323 to 334. There are 120 students in the Temple Course as compared to 80 in the year before.

Mr. Peterson, the newly elected chairman, then announced the following committee chairmen for the season 1930-31; educational, A. M. Lindsley; program, H. E. Parkinson; entertainment, N. C. Einwechter; publicity, C. F. Roth; year book, P. Hurd; recommended practice, B. F. Bachman; memberships, S. B. Mathews; by-laws, A. O. Schaefer; finance, J. R. Adams; and representative on affiliated societies committee of the engineer's club, J. E. Chapin.

The members then traveled to the Mansion House at Fieldsboro, N. J., where the John A. Roebbling's Sons Company provided a splendid chicken dinner. Very attractive favors were also provided for all present by this company.

Following the dinner, Mr. Adams said a few words about the efforts of our fellow-member and newly elected vice-chairman, Dr. H. C. Boynton, of the John A. Roebbling's Sons Company, in arranging the meeting. Dr. Boynton was given a rising vote of thanks. Mr. Peterson then called for another rising vote of thanks to the Roebbling Company.

## A. S. S. T. NAME IN 11 BOOKS Society Publishes Nine Books and Two Second Editions in Two Years

Since 1928, eleven editions of technical books have been published by the American Society for Steel Treating. Two of the eleven were second editions of volumes which had previously proved popular.

The first books to bear the Society imprint were "Lectures on Steel and Its Treatment" by John F. Keller. A revised edition was published in March of this year. Two editions of the Handbook have also been published, one in 1928 and the second in June, 1930.

Other publications include "Heat Treatment, Uses and Properties of Steel," by H. B. Knowlton; "Principles of the Heat Treatment of Steel," by the metallurgical staff of the Bureau of Standards; "Application of Science to the Steel Industry," by W. H. Hatfield; "Nitriding Symposium," by speakers at the eleventh annual National Metal Congress; "Inclusions in Iron," by C. R. Wohrman; "Steel and Cast Iron, their Constitution and Heat Treatment," by F. T. Sisco; "Study of the Quenching of Steel," by H. J. French.

The last named book is now on the press and will be available the later part of August.

## WILL VISIT CHICAGO PLANTS

Visitors to the National Metal Congress in Chicago next September will find opportunity to visit many representative plants in the great Chicago manufacturing district. Arrangements are now being made to have a wide variety of inspection trips scheduled.

Because of the diversity of metal manufacturing enterprises in and around Chicago, H. K. Briggs, assistant secretary of the A. S. S. T., expects to line up a long list of plants willing to throw their doors open to visiting members of the Congress. A detailed roster of plants will be published in a later issue.

A committee of Chicago men is preparing the recommended list of plants for visitation. W. J. MacKenzie is representing the Iron and Steel Division of the A. I. M. E. and G. E. Johnson is committeeman for the Institute of Metals of the same society. C. B. Evans is the American Welding Society member on the committee. D. L. Colwell will serve on the committee on behalf of both the A. S. S. T. and the A. S. M. E.



## "METAL PROGRESS" COMES NEXT MONTH

To Be Official Publication  
of Society from Then On

*Continued from Page One*

edge of every phase of metal world progress that the scope, content and physical form of the monthly publication has been changed.

*Metal Progress* is the result of an intensive and lengthy study to determine what size the publication should be to best serve the interests of its readers and advertisers and what type faces and what style of page layout should be used to make the publication most readable and inviting and what kind of articles would interest the readers most. Printed in *Metal Progress* in condensed and popular form will be important papers delivered at the Annual and Semi-Annual Conventions, together with many other interesting articles.

A questionnaire was recently sent to the membership requesting information as to the subjects in which each was interested. 72 per cent of the forms were returned from which the editorial staff of *Metal Progress* has been able to determine the type of articles to be of greatest interest to the greatest number. Consequently, *Metal Progress* will contain articles by leading authorities upon the following subjects:

### HEAT TREATMENT

Quenching and Tempering  
Carburizing  
Nitriding  
Furnaces  
Furnace Accessories  
Refractories and Insulation  
Quenching Media  
Heat Resisting Metals  
Heat Treatment Accessories

### FABRICATION

Forging  
Stamping  
Gas Welding  
Electric Welding  
Resistance Welding  
Welding Accessories  
Riveting  
Heat Treated Bolts

### STEEL MAKING AND SHAPING

Plain Carbon Structural Steels  
Alloy Structural Steels  
Tool Steels  
Sheet Steels  
Cold Rolled Steels  
Cold Drawn Steels  
Castings—Plain Carbon and Alloy  
Melting Furnaces  
Mill Equipment

### NONFERROUS METALS

Copper Alloys  
Aluminum Alloys  
Nickel Alloys  
Chromium Alloys  
Zinc Alloys  
Tin Alloys  
Lead Alloys

### PICKLING AND FINISHING

Rust Prevention  
Sand Blasting  
Shot Blasting  
Galvanizing  
Plating for Rust Prevention

### MISCELLANEOUS

Machine Tools  
Machine Tool Products  
Machining  
Small Tools  
Laboratory Equipment and Instruments  
Abrabives  
Lubricants  
Industrial Applications of Processes  
Economic Reviews of Metal Industry  
Reports by Foreign Correspondents  
Patent Reviews  
Engineering Index  
Recommended Practices  
Economic Advances in Metallurgy  
Testing Equipment

The *Transactions* of the Society is not to be abandoned but in place of issuing it as a monthly, as has been done since 1920 it will now be issued as a bound volume containing the Convention papers and papers of Semi-Annual Meetings, together with their discussions, and such other papers of a technical and investigational character submitted during the year to the Publication Committee which are deemed to be sufficiently important contributions to be preserved in a permanent record. The bound volume of the *Transactions* issued soon after the close of the September Annual Meeting will also contain the engineering index for the entire year, arranged according to subject. These bound volumes of the *Transactions* will be available to the membership of the Society at the cost of binding, to be approximately \$2.50. The securing of the bound volume of the *Transactions* is optional with the membership and appropriate forms will be forwarded to the membership later to determine their wishes in the purchase of the bound volume.

The publication of the *Transactions* and other technical papers during the year will be, as in the past, under the supervision of Mr. Ray T. Bayless, assistant secretary of the Society, and the Publication Committee.

## INTERESTING INDUSTRIAL PUBLICATIONS

The Leeds and Northrup Co., Philadelphia, has just issued a notebook entitled, "Notes on Hydrogen Ion Measurements." It furnishes information on the measurement of the acidity and alkalinity of water solutions by electrical methods. Most of the text is devoted to a description of apparatus employed for measuring hydrogen ion concentration. The fundamental principles of the method are also discussed.

Bulletin 1-17-16, on the "Properties and Uses of Kromepatch, the Dry Multi-Bond Chrome Ore Cement," has recently been published by the E. J. Lavino and Co., Bullitt Bldg., Philadelphia.

A booklet, "80 Years of Progress," has been issued by William Swindell & Bros., Pittsburgh, in joint commemoration of the firm's eightieth anniversary and of its consolidation with American Dresser Tunnel Kilns, Inc., the Gas Combustion Co., and the Duquesne Burner Service Co., to form the Swindell-Dresser Corp.

The Electric Furnace Company, Salem, Ohio, has just issued a new 8 page bulletin showing several of their new continuous chain belt conveyor furnaces which handle small and medium size work without pans or trays of any kind. The traveling hearth consists of a rugged, flexible, endless alloy belt conveyor. The material is fed directly onto the conveyor, carried through the furnace and either automatically quenched or removed through a side door as desired. This bulletin shows 16 illustrations of these furnaces handling miscellaneous products ranging in size from small cap screws to pieces as long as 48 inches.

A leaflet has been issued by Adam Hilger, Ltd., 24 Rochester Place, Camden Rd., London, N.W.1, England, describing Hilger steeloscopes. These instruments are specialized spectroscopes for the estimation of metallic elements in steel.

The Brown Instrument Co., has just issued a revised edition of their Electric Flow Meter Instruction Book. This 40-page, illustrated book explains the mechanism of the various types of Brown flow manometers, indicators, and recording instruments, gives instructions for installing the equipment, adjusting the instruments for zero readings, and changing range tubes.

Industrial Butane Gas is the title of a booklet describing this material issued by Philfuels Co., General Motors Bldg., Detroit.

Hyro Mfg. Co., Inc., 200 Varick St., New York, has available a bulletin illustrating and describing a new automatic industrial furnace for case hardening by cyanide and salt bath processes. It is stated that this furnace does away with the dangers and laborious effort involved in charging, lifting and unloading of the work, as well as completely eliminating obnoxious fumes.

## SOCIETY MEMBERSHIP ROLLS INCREASE 53 DURING JUNE 5921 New Total of Members

A net gain of 53 members was made by the Society in the month of June. On June 1, 5868 members were on the rolls, but on July 1 the number had increased to 5921. During the month 45 new members were added and 35 more re-instated. Twenty-seven were dropped for arrears.

The standing of the individual chapters:

- |                 |                   |
|-----------------|-------------------|
| 1. Chicago      | 1. Ontario        |
| 2. Detroit      | 2. New Haven      |
| 3. Pittsburgh   | 3. Worcester      |
| 4. New York     | 4. Tri-City       |
| 5. Cleveland    | 5. Schenectady    |
| 6. Philadelphia | 6. Washington     |
| 7. Boston       | 7. Rhode Island   |
|                 | 8. Rochester      |
|                 | 9. York           |
|                 | 10. Rockford      |
|                 | 11. Columbus      |
|                 | 12. Springfield   |
|                 | 13. Southern Tier |
|                 | 14. Notre Dame    |
|                 | 15. Fort Wayne    |

## KELLER TO LECTURE FOR A.S.S.T. AGAIN

Five Groups Tentatively on  
1930-31 Lecture Schedule

John F. Keller of Purdue University, Lafayette, Indiana, has received a year's leave of absence from the university and will devote all his time to the American Society for Steel Treating from August, 1930, to June, 1931.

For three years Keller has given his series of lectures on iron and steel in various industrial centers under the auspices of the A. S. S. T. but until this year has been able to lecture only during the winter and spring months. Over 3600 men have been enrolled in that period.

The tentative 1930-1931 program has been divided into five groups with a possibility of one more. The first group of lectures will be given in Ohio cities from approximately September 1 to October 15. Keller's plan is to deliver his six lectures concurrently in several cities so that during every group the course will be presented to four or five classes.

The textbook used in the course is the recently revised edition of "Lectures on Steel and its Treatment" written by Keller in 1928 and completely revised and rewritten by him in March, 1930. A copy of the book is given to every member of the course.

Ryan, Scully and Co., Philadelphia, has recently issued another edition of R-S Industrial Heat Review. This booklet may be had upon request to Ryan, Scully and company.

## ON METAL CONGRESS PROGRAM



Dr. Herty and G. R. Fitterer, Bureau of Mines, Pittsburgh, are to read a paper at the melting session of the National Metal Congress. Arthur Phillips of Yale University and R. W. Baker, Republic Steel Corp., will report the study of a high chromium, low carbon steel at another session of the Congress.

## 1000 HANDBOOKS TO GO OUT

Headquarters in Position to Send New  
Books Same Day Old Ones Come

More than a thousand copies of the 1930 Metals Handbook are reserved at the National Headquarters awaiting distribution to members who have not yet turned in their copy of the 1928 edition. Cartons for returning the old copies were mailed to every member, but J. Edward Donnellan, secretary of the Recommended Practice Committee, advises those who did not receive one to send their old handbooks in at once, rather than incur the added delay of writing for another.

New handbooks are mailed from headquarters the same day that the old ones are received, so members encounter no delay in receiving their books, except from possible irregularities in the mail service.

## BROWN INSTRUMENT BUILDS

Adding 40,000 Square Feet of Floor  
Space to Factory in Philadelphia

Steadily increasing demand for industrial instruments manufactured by the Brown Instrument Co. of Philadelphia necessitated additions to their plant in 1928 and 1929. Continuing growth has again justified expansion, and the company has just let a contract for 40,000 square feet of additional floor space.

This extra space will be in the form of two additional floors on all of the new two-story concrete sections of the plant. The plans for the work were prepared by the Ballinger Co. of Philadelphia, under the supervision of W. E. Camp, industrial engineer of the Brown Instrument Co. The new space will be occupied early this fall.



THE DAYS OF THE  
SARACENS  
HAVE PASSED  
—THANK HEAVEN

It is said that Saracen warriors, in order to harden the steel of their sword blades, and incidentally to give themselves a little superficial courage, would heat their swords red-hot and run them through the bodies of their servants. It did harden the blade, but it was mighty tough on the servant.

Many improvements in the hardening of metals have come and in turn have been superseded by still newer and better ones since the days of the Saracens. Today, particularly, is a day of progress in the metal world. And in line with the progressive movements on every side, the publishers of the *Transactions* of the American Society for Steel Treating have changed that publication --- have increased its size, its readability, its value as an advertising medium. And having caught the spirit of the age within its covers, they have changed its name to

# METAL PROGRESS



## A. S. M. E. DIVISION PROGRAMS LISTED

### Phenol Materials Molding and Combustion Papers Planned

Two divisions of the American Society of Mechanical Engineers will meet as a part of the National Metal Congress in Chicago the week of September 22. The Machine Shop Practice meetings will be held September 23 and 24, and the Iron and Steel Division programs on September 24-26. Meetings of both divisions will be held at the Hotel Stevens.

A session devoted to the molding of phenol materials is scheduled for presentation at the Machine Shop Practice meeting, A. M. Lynn, Hawthorne Works of the Western Electric Co., in Chicago, will read a paper on molding such materials. The other paper scheduled for this session is a consideration of the engineering factors involved in the replacement of metals by synthetic plastics by Leon V. Quigley, Bakelite Co., New York.

One of the Iron and Steel division sessions will feature papers on combustion problems. W. A. Haven of the Arthur G. McKee Co., Cleveland, has prepared a paper, "Use of Mixed Gases in Soaking Pits and Open Hearth," which will be read at this session. "Combustion of Gas in Blast Furnace Stoves," by H. W. Paret, Jr., Gas Combustion Co., Pittsburgh, is another paper scheduled for the session.

A general session on polishing is also on the program. Robert T. Kent, Devine Bros., Utica, N. Y., will present a paper, as will T. P. Thomas, Westinghouse Electric and Mfg. Co., E. Pittsburgh, who will describe the polishing and repair of worn parts by electro-deposition of iron.

A nitriding symposium with papers by Robert Sergeson, Republic Steel Corp., Canton, Ohio, and Dr. Victor O. Homerberg, Massachusetts Institute of Technology, Cambridge, Mass., will be held as one of the sessions of the Machine Shop Practice division. A paper, "Flange Base Motors," by Herbert Chase, McGraw-Hill Publishing Co., New York, is also on the Machine Shop schedule.

The following papers will be presented at various meetings of the Iron and Steel Division: "Mechanical Developments in Manufacture of Copper Wire," by R. A. Price, Western Electric and Mfg. Co., Chicago; "Manual Semi-Automatic and Automatic Devices for the Protection against Wind of Ore Bridges and Similar Structures," by C. O. Burton, Minnesota Steel Co., Duluth.

Report of Anti-Friction Heavy Duty Bearing Committee; "General Design and Construction of Hot Saws for Cutting Heavy Structural Steel Sections," by A. B. Pearson, Carnegie Steel Co., Munhall, Pa.; "The Manufacture of Large Weldless Forged Steel Pressure Vessels," by J. L. Cox, Midvale Co., Nicetown, Philadelphia; "Straightening of Steel by Rolling," by Leroy B. Mitchell, Sutton Engineering Co., Pittsburgh.

"Recuperator Metallic Furnaces," by G. W. Mantle, Mantle Engineering Co., Pittsburgh; and "Continuous Reheating Furnaces for Rolling Mills," by A. L. Culbertson, Rust Eng. Co., Pittsburgh.

## STAINLESS, HEAT RESISTING STEEL LOS ANGELES SUBJECT

Main, Standard Oil Co., Speaker

By W. M. Hogue

The June meeting of the Los Angeles Chapter of the American Society for Steel Treating was held Thursday, June 12, at the restaurant of the Los Angeles Creamery Company. After the dinner and the regular business of the chapter had been disposed of, Mr. Walter C. Main, materials engineer of the Standard Oil Company, El Segundo, California, presented a very interesting and complete paper on the subject of "Stainless and Heat Resisting Steel."

Mr. Main traced the history and development of the chromium-bearing steel from the original work done by Mr. Brearly of Thomas Firth & Son in England up to the present time. Very interesting photomicrographs were shown of the 11-13 chrome and 13-18 chrome 8 nickel steels under various conditions, and some very interesting practical results were shown of the resistance of these steels to various acids and gases.

The speaker demonstrated his entire mastery of his subject and a lively discussion of his paper followed. One hundred and twelve members and guests were present at the meeting.

The subject of stainless steel always creates a very lively interest among steel treater audiences, and Mr. Main's paper was an outstanding example of this.

## THESE EIGHT MEN ARE AMONG THOSE WHO WILL APPEAR BEFORE THE METAL CONGRESS



The results of almost 40 separate metallurgical investigations will be presented as papers before the twelfth annual convention of the American Society for Steel Treating in Chicago, September 22 to 26. Photographs of the authors of seven of these papers are reproduced herewith. S. J. Rosenberg is associated with the U. S. Bureau of Standards. R. E. Peterson is with Westinghouse in E. Pittsburgh. A. A. Bates has been instructor in metallurgy at Case School of Applied Science, Cleveland, for some time. R. L. Dowdell is at the Bureau of Standards. Dr. Nadai is a Westinghouse man. W. L. Blankenship is at the Naval Gun Factory in Washington.

W. E. Jominy and D. W. Murphy are investigators for the American Gas Association at the University of Michigan.

### STEEL FOUNDRIES TO SHOW

Electric Steel Founders' Research Group Omitted from June 15th List

Unintentionally omitted from THE REVIEW's list of exhibitors at the National Metal Exposition in Chicago next September was the Electric Steel Founders' Research Group. Space was reserved for them on April 1st. Exhibiting with the group will be the Fort Pitt Steel Casting Co., McKeesport, Pa.; Michigan Steel Casting Co., Detroit; Lebanon Steel Foundry, Lebanon, Pa.; Sivyer Steel Casting Co. of Milwaukee and Chicago.

The Electric Steel Founders' Research Group was organized in 1920. Major R. A. Bull, a member of this Society, is director; C. N. Ring is assistant director.

### BOOK BY E. S. LAWRENCE PUBLISHED

Edward S. Lawrence, member of the Pittsburgh chapter of the Society, is the author of a book, *The Manufacture of Steel Sheets*, which was published recently by the Penton Publishing Co., Cleveland. He is associated with the Duraloy Co., in Pittsburgh. At the semi-annual meeting of the Society in New York last February, Lawrence read a paper on "Recent Developments in Normalizing Sheet Steel." This paper was published in the June issue of *Transactions*.

## CHICAGO CHAPTERMEN PLAY AT ANNUAL PICNIC JUNE 14

350 Forget Work for Day

By Harry Hardwicke

Happy days are here again! At least that is the way Chicago Steel Treatingers expressed themselves when they gathered at Lincoln Tavern, Saturday, June 14, for their annual outing and chicken dinner.

A record crowd, numbering 350, made the most of the big relaxation and whooped it up from two to six. First came the food and along with it entertainment concocted to be good for indigestion. The Music Corporation of America put on a show, and with what success!

Then, outdoors under the shade of the towering maples, a canvas ring had been set up. Three amateur boxing bouts supplied excitement aplenty with first class exhibitions of the best-approved method of executing the manly art of self-defence. Some of the fellows played ball—others took up metal casting as a diversion on the horse-shoe courts. The Tom Thumb Golf course was well patronized by the golf fans. Others just visited, and from the happy expressions, we would say that everyone had a good time.

The Chicago chapter members are all looking forward to a year from now when they can again enjoy this good fellowship at a picnic.

## PETERSON WILL LEAD PHILA.

Boynton and Schaefer also Elected to Fill Chapter Offices for Next Year

The Philadelphia chapter has elected Gustav Peterson of the Ludlum Steel Co., as chairman for 1930-31. Dr. H. C. Boynton, John A. Roebing Sons Co., was named vice-chairman. A. O. Schaefer, Midvale Steel Co., was elected to serve as secretary-treasurer for two years.

W. F. Oberhuber, E. B. Estabrook, H. B. Allen, R. H. Patch, R. C. Jordan and L. C. Roth are members of the executive committee.

### ST. LOUIS PICKS 1931 OFFICERS

Carl G. Werscheid, E. W. Bromwich Supply Co., has been elected the 1930-31 chairman of the St. Louis chapter. Edward Prendergast, Schroeter Bros. Hardware Co., was named vice-chairman and W. I. Potteiger, Carpenter Steel Co., secretary and treasurer.

## CANTON-MASSILLON ELECTS

Roshong Named Chairman, Grossmann as Vice-chairman; Eight on Committee

Members of the Canton-Massillon chapter have elected R. G. Roshong, Hoover Co., to serve as chairman for the year 1930-31. M. A. Grossmann, Republic Steel Corp., is the new vice-chairman. Robert Sergeson, Republic Steel Corp., and R. L. Wilson, Timken Steel and Tube Co., were re-elected secretary and treasurer, respectively.

An executive committee of eight was chosen. The members are L. D. Gable, W. M. Farnsworth, F. L. Cavender, T. D. Hayes, W. Hildorf, R. W. Thompson, W. L. Lindsey and John Alden.

## R. I. CHAPTER RATES HONOR

Tops List of Providence Technical Groups in Attendance and Program Quality

The meetings of the Rhode Island chapter of the society have been ranked first of all the meetings of the sections and societies affiliated with the Providence Engineering Society, according to a report issued recently by the sections and meetings committee of the Engineering Society.

Ranking was on a quadruple basis of subject, speaker and presentation, discussion and attendance. All eight meetings of the Rhode Island chapter received the grade of A, the highest given. In attendance also, the chapter led the 14 others meeting regularly at the Providence Engineering Society's headquarters.

## DR. SAUVEUR IN EUROPE

Delegate to Belgian Technical Meetings; To Return for Congress in Chicago

Dr. Albert Sauveur, Gordon McKay, professor of metallurgy at Harvard and honorary member of the Society, has left for a summer's visit to Europe. He will return in time to attend the National Metal Congress in Chicago next September.

While abroad, Dr. Sauveur will attend the 16th session of the Congress International de Mines de la Metallurgie et de la Geologie Appliquee to be held at Liege, Belgium, June 22 to 28. He will also attend the meetings of the Belgian Federation of Engineers, at Brussels, June 17 to 21.

## WOODWARD, SMITH HEADRAIL DIVISION

C. B. Woodworth and Walter Smith have recently been appointed manager and asst. manager of the railroad division of the Vanadium Corp. of Amer. Their offices are in the Straus Bldg., Chicago.

## BOSTON HEARS TALK ON AIRCRAFT METALS

Fischbeck Explains Metallurgy of Airplane Motor Parts

By Howard E. Handy

The June Meeting of the Boston Chapter of the American Society for Steel Treating was held at the Massachusetts Institute of Technology, Cambridge, on Friday, June 6, 1930, dinner being served to about forty members and guests in Walker Memorial.

The principal speaker of the evening was Mr. Henry J. Fischbeck, chief metallurgist of the Pratt & Whitney Aircraft Corporation, Hartford, Conn., whose subject was "Metallurgy of Aircraft Motor Parts." In discussing the important part played by metallurgy in aircraft motor construction, Mr. Fischbeck first gave a resume of the earlier types of aircraft motors and showed how the development of light alloys has brought down the weight several pounds per horsepower.

The rigid inspection to which raw materials are subjected, including chemical analysis, physical tests and microscopical examination were described by the speaker and he also discussed the heat treatments and tests of motor parts, including those made from alloy steel, duralumin, magnesium and other alloys.

The talk was fully illustrated and the speaker had several motor parts for inspection. The discussion was directed by the retiring Chairman, Dr. Robert S. Williams, professor of physical metallurgy, at Massachusetts Institute of Technology. The attendance was about 85.

Prior to the presentation of Mr. Fischbeck's paper, a 15-minute film, entitled, "Reporting the World," was shown. This interesting motion picture, obtained through the courtesy of the *Boston Traveler*, showed the important steps in the making up of a newspaper.

Members of the chapter were grieved to hear of the sudden death of their friend and associate, Harry J. West, district manager of the Ludlum Steel Company. Harry was a charter member of the Boston chapter and took a very active part in its progress.

## DENTIFRICE FOR HANDBOOK

Continued from Page One

John Racataian and Bill Randle, the boys who opened the cartons as they came in, then stuffed the new red books into previously salvaged cartons, slapped the address stickers on the boxes, affixed the proper number of stamps and, in general, worked fast to keep up their record of returning a new book on the same day that the old one came in. And that record still stands.

"The vacation period is undoubtedly the reason why approximately one thousand of the 1928 Handbooks still remain in members' hands," Donnellan stated.

"We hope, however, that long before the annual meeting in the fall, every member will have received his copy of the new National Metals Handbook. Tubes of toothpaste or old safety razor blades will be welcomed as gifts, but not as fair exchanges for Handbooks."

## REVIEW STILL WANTS NEWS ITEMS FROM A.S.S.T. MEMBERS

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American Society for Steel Treating members wishing to submit items of interest for publication in the REVIEW may find the following coupon a convenience to them.

If there is not room enough write a letter either long hand or typewritten.

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A. S. S. T.  
7016 Euclid Ave.,  
Cleveland.

I submit the following item of interest:

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Signed .....

Date .....

Chapter .....



## GOLDEN GATE MEN SEE FORGE PLANT

Also Attend Graduation of  
Eight from Chapter Course

By R. S. Hirst

The regular meeting of the Golden Gate chapter was held on June 11th. The first event was a visit to the plant of the American Forge Co., San Francisco. Joseph Eastwood, president, and Cecil Hawley, vice-president and superintendent, greeted the arriving members and guests and escorted them through the plant, which was in full operation. Forgings varying in size from the thickness of a heavy pie plate to a crankshaft for a 100 horse power engine were being made. The whole visit was both interesting and instructive.

Next on the program was a dinner at the Engineers' Club which 40 men attended. Following the dinner was a short business session and the evening's program. By this time the attendance had increased to sixty. Chairman Johnson called on S. R. Thurston, chairman of the chapter educational committee, who described the course on practical metallurgy.

This was the commencement night of the advanced class. The graduates had attended 18 lectures and 36 laboratory sessions. After this work was completed, each member of the course wrote a paper describing some part of their work.

The papers were judged by two metallurgists who had such a hard time picking the winner that they decided to award two first prizes, to Hugh M. Davies and to Harold A. Wood. Mr. Thurston presented certificates of graduation and expressed the pleasure he received from his association with the students and with the laboratory director, George A. Nelson.

The chapter is greatly pleased with the results of its educational course. It has become one of the features of the Technical Night School of San Francisco, and, starting with the fall term, it will be compulsory for all men taking the course in welding to take also the Golden Gate chapter course of lectures.

These men graduated this term: M. M. Hurst, draftsman, Hurst Engineering Co.; Hugh M. Davies, salesman, Midvale Co.; James V. Coulter, district manager, Earl M. Jorgenson Co.; Wm. A. Harper, production dept., E. H. Edwards Co.; Fred I. Brostrom, draftsman, American Can Co.; E. E. Hall, salesman, Bethlehem Steel Co.; Harold A. Wood, chemist, Robt. W. Hunt Co.; H. Nelson, general foreman, Pelton Water Wheel Co.

Chairman Johnson then turned the meeting over to the program chairman, Myron Bird, who introduced Member Joseph Eastwood, president of the American Forge Co., who gave a talk on forging and its changes in the past 50 years. Joe is old in the forging game, and his talk was very interesting. Mr. Bird then introduced Member Cecil Hawley, vice-president and superintendent of the company, who described the practical side of the forging business. The easy way in which he handled his subject proved his entire knowledge of it.

In conclusion, Mr. Bird thanked the company for their invitation and co-operation in arranging the visit for the Golden Gate members.

### SYRACUSE ELECTS CUMMINGS

Farnsworth, French Also in Office;  
Seven on Executive Committee

M. E. Cummings, Crucible Steel Co. of America, is the newly elected chairman of the Syracuse Chapter. Other new officers are Grover C. Farnsworth, Brown-Lipe-Chapin Co., vice-chairman, and S. W. French, 108 Shelbourne Place, secretary-treasurer.

These men will serve on the executive committee—R. L. Manier, Frank Cannon, C. E. O'Connor, P. W. Eddy, H. L. Day, H. I. Thomasmeyer, and W. J. Hauser.

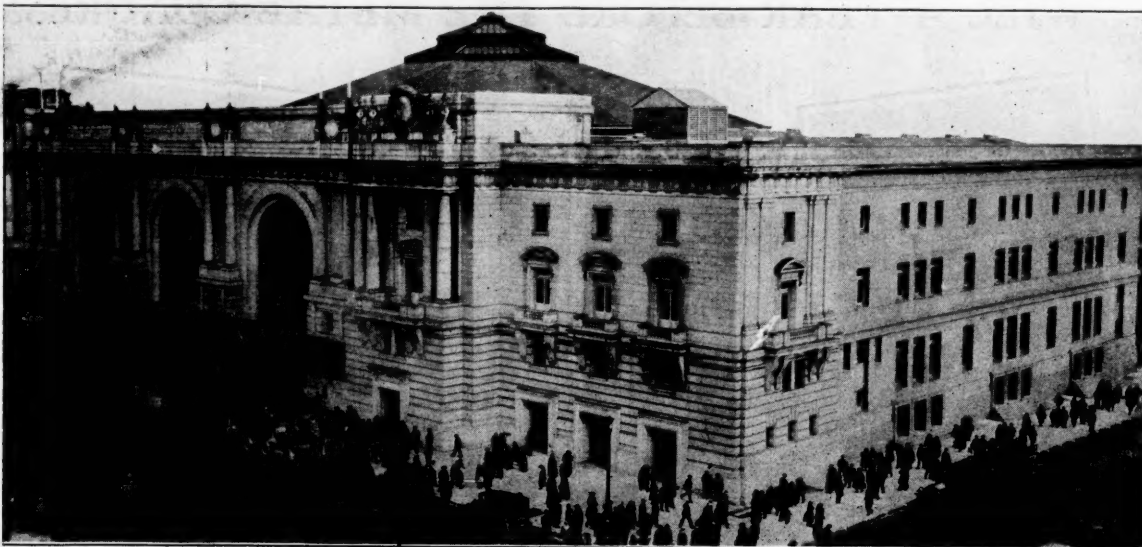
### NEW MONEL METAL FINISH

International Nickel Co., Develops New  
Lustrous Surface for Sinks, etc.

A new Monel Metal finish, designated as No. 8, has been developed by the Huntington Mill of the International Nickel Company to replace those finishes formerly known as No. 3 and No. 4.

It has a silver satin appearance with more lustre than either of the latter, but without the high reflectivity of the full finished No. 5. It was developed to eliminate the need for further polishing of products after manufacturing operations are completed. It is especially adapted to kitchen sinks where its satin surface can be maintained more easily than can a mirror-like lustre.

## WHERE 1931 WESTERN SHOW WILL BE HELD



*The 1931 National Western Metal Congress and National Western Metal and Machinery Exposition will be held in San Francisco's Civic Auditorium, pictured above, the week of February 16th.*

*The building will provide more than seventy thousand square feet of exhibit space with no restrictions against operating exhibits. Floor plans have been sent out and many reservations have already been made.*

*The Civic Auditorium will also be the headquarters for all sessions of the Congress.*

### LADIES' ENTERTAINMENT PLANNED

A. S. S. T. members' wives fortunate enough to be in Chicago during the annual convention will be well entertained. A full and varied schedule of things to do in the midwestern metropolis is now being assembled in the national offices and will be published in a later issue of THE REVIEW. Effort is made annually to have as many ladies as possible present during Convention week, and this year an unusually fine program of entertainment is being prepared for those ladies visiting the "windy" city. Trips to the museums, shopping tours and motor rides will be features.

### MILWAUKEE NAMES HANSON LEADER

F. A. Hanson, Hevi-Duty Electric Co., will be chairman of the Milwaukee chapter during 1930-31. Other officers will be Vice-Chairman, Ray Thiesenhusen, Wesley Steel Treating Co., and Secretary-Treasurer, Frank Kubosh, who is with the Thurner Heat Treating Company.

The Hevi Duty Electric Company, Milwaukee, has just published a new bulletin No. 630 which describes its new office and manufacturing plant.

### KELLEY CO. OMITTED FROM LIST

The J. W. Kelley Co., of Cleveland, was inadvertently omitted from the list of exhibitors at the 1930 National Metal Exposition, which was published in the July issue of THE REVIEW. The list purported to be correct as of June 15, although two months before the Kelley Co. had contracted for space.

### MINNESOTA FACULTY GETS DOWDELL

Ralph L. Dowdell, senior metallurgist at the U. S. Bureau of Standards, has resigned from the Bureau to become professor of metallurgy at the University of Minnesota in September. He was previously connected with the University, from which he graduated in 1918, as instructor and later as assistant professor of metallurgy. He received this Society's Howe Medal in 1928.

### BATTELLE INSTITUTE ADDS EPSTEIN

Samuel Epstein, research metallographer in the physical laboratory of the Illinois Steel Co. at South Chicago, has resigned to become associated with the Battelle Memorial Institute at Columbus. Previous to his position in South Chicago he was for 11 years at Washington in the metallurgy division of the Bureau of Standards.

### LUDLUM PROMOTES T. C. SHERMAN

T. C. Sherman, Cleveland manager of alloy steel sales for the Ludlum Steel Co., will become assistant to the president of the company after September 1st, with headquarters in Watervliet, N. Y. Sherman has been a member of the Cleveland chapter since 1923 and served on the chapter's executive committee in 1929-30.

J. H. Flaherty, metallurgist for the Jones & Laughlin Steel Corporation and a member of the Pittsburgh chapter, has been transferred to the Aliquippa Works of the corporation.

### THUM NEW A.S.S.T. EDITOR

Continued from Page One

the field engineering on a seven mile railroad and a \$4,000,000 smelter which was being erected by the International Smelting Company, a subsidiary of Anaconda. Thum's title at this time was chief civil engineer. When this work was completed, he went to Great Falls, Montana, as chief engineer of the Great Falls smelter. For four years he studied plans for revising the concentration and smelting processes of copper and as a result the smelting departments were completely rebuilt.

When the war broke out in Europe the smelter was shut down and Thum accepted a position of professor of metallurgy at the University of Cincinnati. In his schooldays he had studied steel, of course, but because of his specialization in nonferrous metallurgy, he had rather neglected iron and steel. Then, also, the heat treatment of steel had not reached importance until after his schooldays.

"It was another case of a professor studying like hell to keep five jumps ahead of his classes," is Thum's description of his professorial duties. However, the two years' stay in Cincinnati gave him an unusual opportunity to become familiar with physical metallurgy, metallography, etc.

No particular sign of editorial ability had appeared prior to his professorship, but while in Cincinnati, Thum wrote a description of his metallurgical experiences for the magazine, *Chemical and Metallurgical Engineering*. The article was accepted and not long after the editor offered him a chance to enter the McGraw-Hill organization. He accepted, and from 1917 to 1923 was metallurgical editor for *Chem. and Met.*, first in Salt Lake City, as western editor, and later in New York where he devoted himself to heat treating, manufacture and uses of fine steel and alloys. Here he acquired a large body of friends among the men who were doing things in this line.

In 1923 Thum left the McGraw-Hill organization to take charge of the technical publicity department of the Union Carbide and Carbon Corporation. In the succeeding four years he did promotional work on the oxyacetylene process and came in contact with the editors of the leading metal publications. During this period Thum's department took over the technical publicity and advertising for all units of the corporation except the National Carbon Company.

From this position he went to the *Iron Age* as associate editor. General plant write-ups and reports on metallurgical investigations were his specialty. While on the *Iron Age* staff, he earned the reputation of being one of the keenest metallurgical editors in the country. He resigned from this position on July 1, 1930, to become editor of *Metal Progress*.

Mr. Thum says, "In my opinion, *Metal Progress* is bringing to the metal industries an editorial policy which is not duplicated by any other publication in the field. I am delighted to have the opportunity of being associated with the magazine from the time of its first issue."

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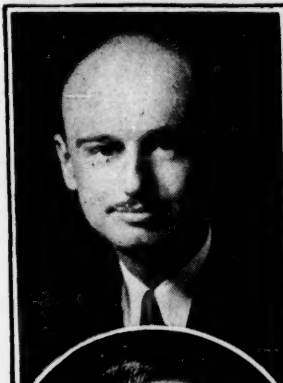
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J.H.HIGGINS



A.S.JAMESON



G.R.BROPHY

W.R.HUEY  
(Center Photo)  
E.C.BAIN

H.B.PULSIFER

Above is a group of speakers scheduled for the 12th annual National Metal Congress in Chicago the week of September 22, 1930. A. S. Jameson is with the International Harvester Co. H. M. Webber is with General Electric, as is G. R. Brophy. J. H. Higgins is connected with the Camden Forge Co. E. C. Bain is with the U. S. Steel Corp. W. R. Huey is with duPont, and H. B. Pulsifer is associated with the Ferry Cap and Set Screw Co.

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H. T. Harrison has been made district sales manager of the Duraloy Co. at Cleveland. Mr. Harrison was formerly connected with the New York office of that company, and before that was, for a number of years, with the Crucible Steel Company of America.

Ancel St. John and Herbert R. Isenburger have announced the organization of the St. John X-Ray Corporation to carry on the X-ray inspection and sales business for some time conducted by them at 505 Fifth Avenue, New York.

## DIRECTORS MEET JULY 1

Continued from Page One

and Machinery Exposition were reported to the board as being in a very active state of formation.

Howard S. Taylor, of Stanford University, the chairman of the meetings and papers committee for the Western Congress, reported splendid progress in the preparation of the same, and indicated that they were receiving the usual enthusiastic and splendid cooperative support of the other technical societies associated on the coast.

Floor plans and contract applications have been forwarded containing information relative to the western show, and the secretary reported the receipt of numerous contracts covering exhibit space.

The report on the National Metals Handbook (see detailed report elsewhere in THE REVIEW) was presented to the board members and received their hearty approval.

They were sincerely appreciative of the splendid work of the recommended practice committee of the A. S. S. T. as well as the committee of the Institute of Metals division of the A. I. M. E. on the nonferrous data sheets and to Mr. J. Edward Donnellan, secretary of the committee.

The board appointed Dr. O. E. Harder, chairman, and Mr. Frank T. Sisco and Dr. H. W. Gillett members of a committee to make nominations to the committee on award of the *Popular Science Monthly* prize.

Dr. George B. Waterhouse of Massachusetts Institute of Technology, and chairman of the Boston chapter, was appointed to represent the Society on a committee which will consider the advisability of the formation of a committee on the international collaboration in metallurgical research.

The board of directors, during this meeting, reviewed all the activities of the Society and found them to be in very satisfactory condition.

## ONTARIO WILL USE "REVIEW"

Officers and Members to Send in News of Interest for Chapter Publicity

The officers of the Ontario Chapter of the Society have sent a letter to each member of the Chapter asking that THE REVIEW be read carefully and that especial note be taken of the request for personal items of interest.

"This provides a means of spreading our own Ontario Chapter news to our own members," the letter states, "and with all cooperating we can get our news to the Society as a whole as well as to ourselves."

## GEM DIAMOND LESS HARD THAN BLACK

Black Diamond Hardest Known  
Material says Mines Bureau

Abrasive diamonds, or industrial diamonds as they are commonly called, are of two types—the black diamond, or carbonado, and bort, says Dr. Oliver Bowles in a report recently issued by the United States Bureau of Mines. The black diamond is the hardest known substance, the claim being made that it is 3 per cent harder than the gem diamond. It is lacking in cleavage, is opaque, and resembles a piece of lava or coal. Black diamonds are found chiefly and almost exclusively in the State of Bahia in the interior of Brazil. The second variety, or bort, consists of cull stones from the gem-diamond industry. Most of these are obtained from South Africa. Unlike the black diamond, bort has a distinct cleavage. Although the diamond is extremely hard it is also brittle and is easily shattered if subjected to a sudden shock or blow.

The chief use of industrial diamonds is in the manufacture of drill bits for rock drilling and boring. The diamonds are set in the lower edge of a hollow cylinder of soft annealed steel. By rotation the bit cuts out a cylindrical core of rock. Black diamonds are used chiefly for this purpose. The chief use of bort is in the manufacture of tools for turning abrasive wheels and in the manufacture of cutting tools which are used for turning hard rubber, ebonite, vulcanite, fiber, metals and alloys, mica, and other materials that dull other tools quickly. Diamond tools are of special value for the production of a large number of pieces of exact and uniform sizes. Perforated diamonds are used as dies for drawing fine wire of accurate and uniform cross section. Diamond saws up to 10 feet in diameter are used widely for sawing rock such as marble or granite. The diamonds are mounted in detachable steel sockets inserted at regular intervals around the rim. Small diamonds are used extensively as glass cutters. Fragments of bort are pulverized to form diamond dust which is used for cutting and polishing in drilling diamonds to make diamond dies, and in sawing porcelain and similar hard materials.

No abrasive diamonds are produced in the United States. Import figures for the past several years show a decrease in value of bort and dust, materials which are used chiefly for grinding and polishing, but a marked increase in the value of uncut diamonds used by glaziers, engravers, and miners. Much progress has been made in the manufacture of synthetic abrasive products which are substituted for diamonds in some fields of application. The fact that diamond importation has steadily increased, even when faced with the growing competition of synthetic abrasives, is an indication of the rapidly increasing use of abrasive materials in industry.

## GENERAL ELECTRIC OFFERS NEW SWITCHBOARD DEVICES

Plugs, Receptacles Save Space

The General Electric Company announces a new line of potential and synchronizing plugs and receptacles for use on switchboards. By means of the new design, space in mounting receptacles is saved and a more pleasing appearance on the switchboard front.

The new devices have insulating material covering the front end of the contacts, a departure from older practice. A reduction is also brought about in the spacing of the receptacles, thereby permitting a larger number of different circuits to be brought to a panel within a given area on the switchboard. At the same time, the design prevents any interchangeability of the plugs.

Plugs and receptacles intended to perform different functions or for use on different voltages have varied distances between the centers of the points. The new design permits a greater number of combinations within a given space.

## B. F. SHEPHERD BACK FROM EUROPE

B. F. Shepherd, chief metallurgist for the Ingersoll-Rand Co., Phillipsburg, N. J., has just returned from a visit to England and the continent. He visited the principal steel companies in England, Sweden, Germany, Czechoslovakia, Austria, France and Belgium.

## G. E. SPLITS INDUSTRIAL SECTION

Effective July 1 the industrial heating and welding section of the industrial department, General Electric Company, was divided into two sections. C. L. Ipsen is manager of sales of the industrial heating section, and L. D. Meeker is manager of sales of the electric welding section.



## 1930 CONGRESS PREPRINTS ARE NOW AVAILABLE TO MEMBERS

The Publication Committee has preprinted the following papers which are scheduled for presentation before the twelfth annual National Metal Congress in Chicago, the week of September 22, 1930.

These are available to the American Society for Steel Treating members at no cost. They should, however, be ordered according to the number printed before the title of the paper. Preprints are sent postpaid. Preprints will be ready for mailing August 10th.

The following is the list of preprinted papers which will be delivered before the 1930 Convention:

- 1 CORROSION AND HEAT RESISTANT NICKEL-COPPER-CHROMIUM CAST IRON  
J. S. Vanick and P. D. Merica, International Nickel Co., New York
- 2 FATIGUE TESTS OF SMALL SPECIMENS WITH REFERENCE TO SIZE EFFECT  
R. E. Peterson, Westinghouse Electric & Mfg Co., E. Pittsburgh
- 3 PHYSICAL PROPERTIES OF FINE BOLTS  
H. B. Pulsifer, Ferry Cap and Set Screw Co., Cleveland
- 4 ELECTROLYTIC DECOMPOSITION OF CEMENTITE AND AUSTENITE  
H. A. Schwartz, G. M. Guiler & H. H. Johnson, National Malleable and Steel Castings Co., Cleveland
- 5 STRESSES AND CRACKS IN HARDENED AND GROUND STEEL  
G. R. Brophy, General Electric Co., Schenectady
- 6 ESTIMATION OF INTERNAL STRESS IN QUENCHED HOLLOW CYLINDERS OF CARBON TOOL STEEL  
O. V. Greene, Carpenter Steel Co., Reading
- 7 COLD HEADING DIE LIFE  
A. S. Jameson, International Harvester Co., Chicago
- 8 EFFECTS OF PREQUENCHED TREATMENTS ON THE HARDNESS, BODY AND STRUCTURE OF HARDENED TOOL STEEL  
R. H. Harrington, General Electric Co., Schenectady
- 9 SCALING OF STEEL AT FORGING TEMPERATURES  
W. E. Jominy and D. W. Murphy, University of Michigan, Ann Arbor
- 10 FORGING PRACTICE, U. S. NAVAL GUN FACTORY  
W. L. Blankenship, Naval Gun Factory, Washington
- 11 HEAT TREATMENT FURNACES USED IN THE MANUFACTURE OF TELEPHONE EQUIPMENT  
W. A. Timm, Western Electric Co., Chicago
- 12 COPPER BRAZING IN HYDROGEN ELECTRIC FURNACES  
H. M. Webber, General Electric Co., Schenectady
- 13 CRITICAL RANGES IN PURE IRON-CARBON ALLOYS  
R. H. Harrington, General Electric Co., and W. P. Wood, University of Michigan
- 14 THE TUNGSTEN CARBON SYSTEM  
W. P. Sykes, General Electric Co., Cleveland
- 15 CONCENTRATED PRESSURE AND ITS APPLICATIONS TO THE ROLLING PROCESS  
Dr. A. Nadai, Westinghouse Electric & Mfg. Co., E. Pittsburgh
- 16 INFLUENCE OF NICKEL ON THE CHROMIUM-IRON-CARBON CONSTITUTIONAL DIAGRAM  
V. N. Krivobok, Carnegie Institute of Technology, and M. A. Grossmann, Republic Steel Corp.
- 17 STUDY OF A HIGH-CHROMIUM, LOW-CARBON STEEL  
Arthur Phillips, Yale University, and R. W. Baker, Republic Steel Corp.
- 18 CORROSION TEST FOR RESEARCH AND INSPECTION OF ALLOYS  
W. R. Huey, E. I. DuPont de Nemours & Co., Wilmington, Delaware
- 19 PROCESS RELIABILITY IN STEEL MAKING  
George A. Dornin, Gathmann Engineering Co., Baltimore
- 20 TENSILE PROPERTIES OF CARBON STEEL CASTINGS  
R. L. Dowdell and J. V. McCrae, Bureau of Standards, Washington
- 21 CASTING GUNS BY THE CENTRIFUGAL PROCESS  
Col. Tracy G. Dickson, Watertown Arsenal, Watertown, Mass.
- 22 NITRIDING IN PACKING MATERIALS AND AMMONIA  
A. B. Kinzel and J. J. Egan, Union Carbide and Carbon Research Labs., Long Island City
- 23 NITRIDING THE LARGER FORGINGS  
J. H. Higgins, Camden Forge Co., Camden, N. J.
- 24 NITRIDING FURNACES AND THEIR EQUIPMENT  
W. J. Merten, Westinghouse Electric & Mfg. Co., E. Pittsburgh
- 25 FURTHER INVESTIGATIONS IN NITRIDING  
Robert Sergeson and H. J. Deal, Republic Steel Corp., Massillon
- 26 RELATION OF STRUCTURE TO SURFACE HARDNESS OF A CASE HARDENED STEEL  
H. W. McQuaid and O. W. McMullan, Timken-Detroit Axle Co., Detroit
- 27 MODIFYING ACTION OF FERROSILICON UPON THE PROCESS OF CARBURIZATION  
E. G. Mahin and F. J. Mootz, Notre Dame University, Notre Dame, Ind.
- 28 RESISTANCE OF STEELS TO ABRASION BY SAND  
Samuel J. Rosenberg, Bureau of Standards, Washington
- 29 METASTABLE EQUILIBRIUM IN HYPEREUTECTOID IRON-CARBON ALLOYS  
A. A. Bates and D. E. Lawson, Case School of Applied Science, Cleveland
- 30 STEEL INGOTS  
H. H. Ashdown, Consulting Metallurgist, Irvine, Pa.
- 31 RECENT DEVELOPMENTS IN GAS CARBURIZATION  
O. J. Wilbor and J. A. Comstock, Peoples Gas Light and Coke Co., Chicago
- 32 RADIOGRAPHY BY THE USE OF GAMMA RAYS  
R. F. Mehl, G. E. Doan and C. S. Barrett, Anacostia, D. C.
- 33 RELATIONSHIP BETWEEN WELDED-ON OVERLAYS AND HEAT TREATMENT  
Miles C. Smith, Stoddy Co., Whittier, Calif.

### STORIES OF RESEARCH PUBLISHED

The Engineering Foundation, Inc., New York, has published a series of volumes entitled "Popular Research Narratives" which consists of brief articles by leading contemporary research workers in all fields of science. Each scientist undertakes to describe simply and in an interesting style the ways in which science and engineering are serving mankind.

### NEW BOOK ON WELDING PUBLISHED

H. S. Card, editor of the *Welding Engineer*, is the author of a recently published book, "The Welding Industry." The volume describes the various welding processes and discusses the industries served by welding and the future for the sales of welding products. Two chapters are devoted to the merchandising and marketing problems of the welding industry.

### HOTEL RESERVATION BLANK

National Metal Congress and Exposition  
Chicago, Ill., September 22-26, 1930.

Hotel Stevens,  
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Chicago, Ill.

Please reserve the following accommodations as checked:

	\$3.00		\$ 4.50		\$ 6.00
	3.50		5.00		7.00
Single Room	4.00	Double Room	6.00	Double Room	8.00
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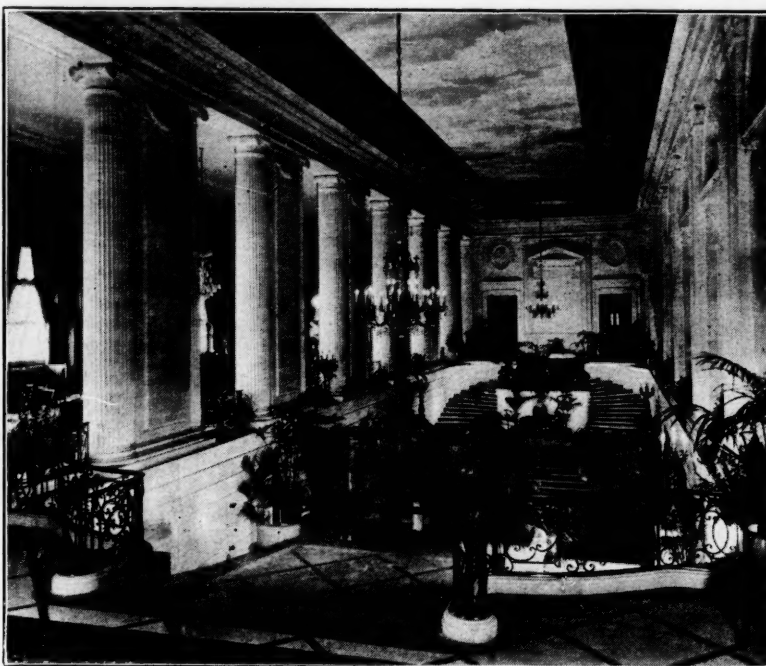
Date and hour of arrival .....

To be occupied by .....

Name .....

Address .....

## STEVENS HOTEL BEAUTY SPOT



One of the imposing staircases of the Hotel Stevens, Chicago, headquarters for the National Metal Congress and Exposition during the week of September 22. The Stevens is the largest hotel in the world. All sessions of the Congress and the entire Exposition will be held under its roof. The Stevens has guest room accommodations numbering three thousand or more and will be amply large to take care of Metal Congress visitors.

## WORCESTER ELECTS ELEVEN

Hague Tops List of Three Officers, Eight Committeemen Elected for 1930-1931

The Worcester chapter has selected William Hague, Arter Grinding Co., as its chairman for 1930-31. Milton H. Frommann, of the Reed and Prince Mfg. Co., is the new vice-chairman and Robert Jordan, Wickwire Spencer Steel Co., is secretary-treasurer.

Serving as executive committeemen are Robert E. Bigelow; Stuart F. Brown; John R. Crotty; Carl G. Johnson; Ralph Jernberg; John F. Schuster; Donald Strand; and Theodore Packard.

## KESHIAN HEADS NEW HAVEN

Dawless, Stockwell, Aurand and 12 Executive Committeemen Elected

The 1930-31 chairman of the New Haven chapter will be H. G. Keshian, Chase Companies. F. J. Dawless, Crucible Steel Co., will be vice-chairman and F. E. Stockwell and W. G. Aurand will be secretary and treasurer respectively.

The following twelve will be executive committeemen: B. T. Baker, R. L. Baldwin, R. Card, P. L. Clark, J. C. Nelson, Arthur Phillips, R. T. Porter, W. H. Shortell, R. G. Hall, S. C. Spalding, Charles Knapp and G. S. Watrous, Jr.

### ARTICLE BY REITER PRINTED

Fred M. Reiter, industrial engineer for the Dayton Power and Light Co., Dayton, O., and secretary of the A. S. S. T. chapter in that city, had an article on "Methods of Heat Saving" published in the July issue of *Industrial Gas*.

## A UNIVERSITY OF METAL PROGRESS

*The Technical Sessions Are Your Classrooms . . The Exhibits Your Laboratory*

*During the week of*

**NATIONAL METAL CONGRESS  
and  
NATIONAL METAL EXPOSITION**

*to be held in*

**STEVENS HOTEL, CHICAGO  
SEPTEMBER 22-23-24-25-26**

IT would take more than 10 ordinary sized volumes to reprint the complete technical and practical papers and verbatim discussions of the sessions of National Metal Congress. It would take as many more to illustrate and describe the exhibits of the Exposition. It would take months to read them. And even then the subjects probably would not be as clearly understood as though you actually heard the discussions and saw the exhibits. That is why you can learn more in a week from the "classroom" sessions of National Metal Congress and the "laboratory" exhibits of National Metal Exposition than you can from months of book study. It is education in its most practical and profitable form.

If your work touches in any way on the production, selection, fabrication, inspection, treatment, welding or application of metals, this is a week of education that will be valuable to you. That is why you should make your reservations NOW to be in Chicago September 22nd to 26th inclusive.

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